IDAHO Currents 2002

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Energy Division demonstrates B20 biodiesel

The chance to explore new solutions for air quality problems in the Treasure Valley has prompted the Community Planning Association of Southwest Idaho and the Meridian School District to become partners in the Energy Division's B20 Treasure Valley biodiesel project.

"COMPASS is firmly committed to the long-term health of Treasure Valley residents by protecting and improving the air quality in Ada and Canyon counties. This commitment is fully consistent with your program goals," says COMPASS Chairman Todd Lakey, a Canyon County Commissioner.

The Meridian School District will begin the program on a pilot basis with a limited number of its school bus fleet. District officials estimate the buses will use up to 50,000 gallons of B20 biodiesel during the coming six to eight months.

Both COMPASS and school district officials say their move is prompted by the proven ability of B20 to significantly reduce potentially harmful vehicle exhaust emissions common in diesel engines. The Meridian School District currently has 200 diesel-powered buses in its fleet.

Various school districts around the country routinely use B20 fuel to help reduce dangerous exhaust emissions from diesel-powered school buses. The B20 Treasure Valley biodiesel project involves using up to 125,000 gallons of B20 biodiesel over the next six to eight months in the Treasure Valley.

What is B20 biodiesel?

"B20 biodiesel is a fuel produced by mixing 20 percent biofuel and 80 percent petroleum diesel," says Dick Larsen, public information officer for the Idaho Department of Water Resources. "The B20 mixture then can be used in diesel engines without any modification to the engines."

B20 biodiesel fuel burns cleaner than regular diesel, greatly reducing harmful vehicle emissions common in diesel exhaust, especially dangerous particulates. B20 fuel can reduce particulates in diesel exhaust by up to 18 percent, air toxins by up to 20 percent, carbon monoxide by about 12 percent and hydrocarbons by 11 percent, according to the U.S. Department of Energy.

Biofuel is produced from common vegetable oils or recycled restaurant greases, used cooking oils, lard and animal tallow or fats, among other things.

"The biofuel to be used in the Idaho project is produced from virgin

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Meridian School District bus driver Dottie Rhodes adjusts a magnetic sign that will be placed on the school buses that participate in the B20 Treasure Valley Biodiesel Project this spring. ***(Photo by Linda Cawley)***

Anne Brink joins Energy Division

Anne Brink, energy specialist with the Energy Division, reviews an upcoming Gemstar[SM] ad with Larry Olsen, pre-production supervisor with The Idaho Statesman. ***(Photo by Diane Holt)***

If you're interested in building or buying a new home, Anne Brink wants to help you construct one that is safe, durable and energy efficient.

Brink is the newest addition to the Energy Division. As an energy specialist, Brink is working with the division's residential and industrial energy efficiency programs. One of her first tasks is promoting the Gemstar[SM] program for Idaho. One of her goals is to spread the word throughout the state that it's possible to build an energy-efficient home that doesn't cost a lot more to build than a standard home.

Brink comes to the Energy Division with a master's degree in marketing from Michigan State University and a bachelor's degree from Hope College in Holland, Mich.

During the past 10 years Brink has worked for such nationally known companies as Hewlett-Packard, Heinz Corporation (Ore-Ida Foods, Inc.) and Sara Lee Corporation in their marketing departments.

IDAHO Currents

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soybean oil and will be supplied by World Energy Alternatives, LLC, headquartered in Chelsea, Mass., the leading supplier of biodiesel in the nation," says Larsen.

World Energy will ship the pure biofuel to United Oil, a partner in the project. United Oil will then mix it with regular diesel to produce the B20 fuel for delivery to the various partners.

Besides buses from the Meridian School District, a variety of diesel vehicles within the Treasure Valley will use the fuel during the project. These include four garbage and two recycling trucks from Sanitary Services Company of Meridian and 20 passenger commuter buses from Treasure Valley Transit.

COMPASS has a particular interest in the B20 fuel because it burns cleaner than regular diesel, especially in the area of particulates. Particulates are an air quality concern in the Valley, according to June Ramsdell, a COMPASS technical analyst who is the agency's representative in the partnership.

COMPASS air quality officials are currently working to secure a Federal Transportation grant that would let the agency test B20 biodiesel, including the school buses from the Meridian School District.

The partnership is also exploring the possibility that Idaho Department of Transportation emergency response units operating on Interstate 84 might also use the B20 biodiesel during the project. Other diesel users will be added as the program goes along.

A $30,000 grant from the U.S. Department of Energy is paying for the program, which is being managed by the Energy Division. The partners will pay the normal price of petroleum diesel while the Energy Division pays the difference in cost between standard petroleum diesel and B20 diesel, typically about 15-20 cents per gallon.

Experts agree: It's hard to escape household mold

Mold – it's everywhere. Why? Because buildings leak.

According to Joseph Lstiburek, "Siding and stucco leak, windows leak and doors leak." Unless you take the time to allow for leakage when constructing a house or building, sooner or later your walls will begin to accumulate some type of mold.

Lstiburek is an internationally recognized authority on moisture-related building problems. He is the author of numerous books on indoor air quality, durability and energy efficiency in buildings.

Doug Ness, a local contractor involved in mold remediation, agrees. He notes that even in our dry desert climate hundreds of new homes have substantial mold problems.

Most of the problems he sees come from water in crawl spaces that percolates from clay bearing soils where there are no properly installed drainage systems. Ness also sees mold due to roof drainage into walls and other problems noted by Lstiburek.

To control moisture in new homes, these experts recommend:

- Install a drainage plane underneath the siding or stucco. Many older homes have a layer of felt under the siding that provides this protection.
- Create a drainage pan around door and window frames. Modern flashing techniques are inexpensive and quick.
- Install a consistently sloped drainage system around the foundation if percolation tests show any possibility that the soil traps and holds moisture.
- Make sure plastic sheeting completely covers the ground under the house, is lapped at all joints and goes up the sidewall a few inches.

Too much moisture in a home can lead to mold, mildew, and other biological growth. This condition can lead to rot, structural damage, premature paint failure and a variety of health problems. Normal activities of everyday living – like breathing, showering, cooking and drying clothes – contribute moisture to the air inside your home.

To help control moisture in any home – new or existing:

- Use proper ventilation to maintain indoor humidity levels within an acceptable range;
- Provide ventilation in kitchens and bathrooms;
- Make sure the clothes dryer is vented directly to the outside;
- Ensure that the home envelope prevents moisture entry into your home; and
- Fix foundation water problems and any leaks in the roof, around doors and windows, around pipes.

> **"In addressing an existing mold problem the first task is to identify and., if necessary, elimnate the mositure problem that caused it."**
>
> *McGregor Pearce, mold specialist*

The nose knows

If you've ever walked into a room that hasn't had any ventilation for a while, you may have noticed a musty odor. There's a good chance that the room has been exposed to a significant amount of moisture – just enough to cause mold to grow. You may not see it at first, but it could be "hiding" in plywood, drywall or even under the carpet.

"In addressing an existing mold problem, the first task is to identify and, if necessary, eliminate the moisture problem that caused it," says McGregor Pearce, a specialist on mold contamination in buildings and the resulting health hazards.

Identifying mold growth is fairly easy. Look for the following:

- Visible mold growth (discoloration ranging from white to orange and from green to brown or black).
- Musty odor.
- Discoloration of building materials in areas where previous water damage occurred, such as drywall and plaster or plywood.
- Rotting material.

Once you have identified mold growth in your home, the extent of the problem must be determined, then correct the source of the moisture, such as a leaky roof or window.

"Deciding what to throw away is a challenging problem," says Pearce. "Drywall, carpet, upholstery or other porous materials are difficult to save once

A well-designed yard can be beautiful, functional and still save water

Tired of a "ho-hum" yard?

With a little pre-planning you can turn your yard into a neighborhood showplace and save water and energy at the same time. What's the key? Xeriscaping.

Xeriscaping, pronounced zer-i-skaping, is derived from the Greek "xeros" meaning dry, combined with landscaping, thus xeriscaping.

This doesn't mean a rock garden or the absence of lawns, flowers and shrubs. Xeriscape landscaping incorporates seven basic principles that lead to saving water:

- Planning and design
- Soil analysis
- Practical turf area
- Appropriate plant selection
- Efficient irrigation
- Use of mulches
- Appropriate maintenance

Benefits

Xeriscaping saves water and the energy used to pump it. If the area around your house is xeriscaped, it can reduce the chances of water entering the crawl space or basement and causing mold and other damage. Xeriscaping around fences can reduce stain and damage from sprinklers.

Your plan

Whether you're designing a yard for a new home or just updating your present landscape, consider the exposures on the site. As a general rule, south and west exposures result in the greatest water losses, especially areas near buildings or paved surfaces.

You can save water in these locations simply by selecting plants that adapt to less water. Grasses and plants that require little water can be a beautiful alternative to thirsty lawns.

Next, check the slope of your yard, both in the front yard and the back yard. Steep slopes, especially those on south and west exposures, waste water through runoff and rapid water evaporation. When planning your yard, slope the lawn area slightly away from the house about 6-12 inches per 100 feet.

Soil analysis and preparation

Proper soil preparation is the key to successful water conservation. If the soil is very sandy, water will be lost along with valuable nutrients due to leaching below the root zone. If your soil is a heavy clay texture it will lose water through runoff.

In clay-type soils, the clay holds what water does get into the ground so tightly that plants often wilt from lack of water. Plants also need air to thrive, but if the air spaces are small and filled with water, the plant roots often suffer from oxygen starvation.

If you're not sure what type of soil is in your yard, consult your local county extension office to get instructions for taking soil samples and obtaining soil analysis.

To increase plant health and conserve water, add organic matter to the soil. This increases the soil's ability to absorb and store water in a form available to the plant. Depending on the type of soil in your yard, till in 2-6 inches of well-decomposed organic material or peat moss.

Bark chips and sparse shrubs were used for the backyard the first year after this Boise home was constructed. A well-landscaped yard takes considerable planning to achieve a pleasing and functional area. ***(Photo by Diane Holt)***

See Well-designed page 5

Well-designed from page 4

Practical turf areas

Depending on the size of your yard, you can plant your lawn in several different ways. If your yard is fairly small, it may be just as cost effective to install sod. This "instant" yard will require less watering than if you use the direct seeding method.

Another alternative is hydro seeding by a commercial firm. This is usually more expensive than direct seeding, but the grass establishes better under dry conditions. If you seed your lawn, be sure to use a mechanical seeder and follow the instructions on the seed packages.

Plant selection

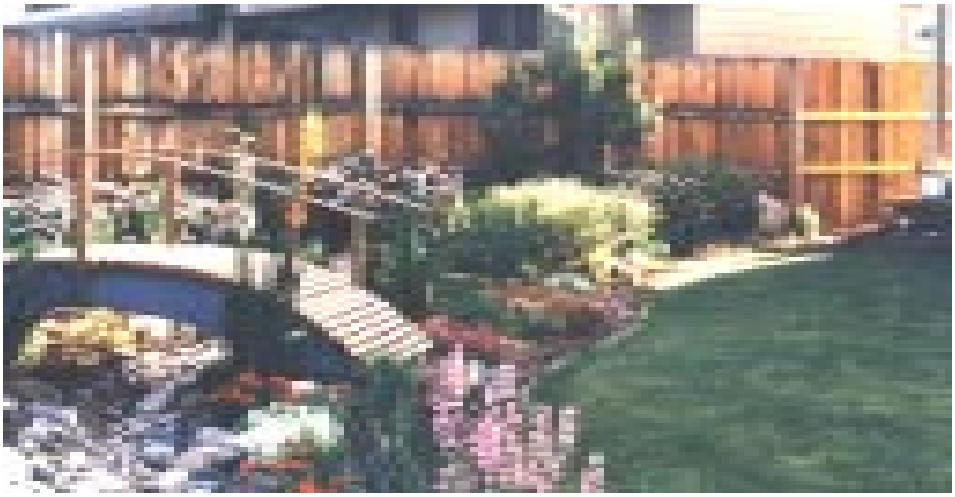
When selecting the type of grass for your lawn, keep in mind the intended use of your yard. Different types of grass require diverse levels of maintenance, produce different levels of quality, and perform well under various climate, soil, and shade conditions.

Kentucky bluegrass, which does well in sunny areas, is the most widely adapted and used lawn grass in Idaho, according to the University of Idaho Cooperative Extension System.

"However, bluegrass has high water requirements and is prone to heat and drought stress," says Mike Purcell, an energy specialist with the Energy Division. "Newer types of tall fesues are slower growing more disease resistant, and have at least 30 percent lower water requirements. Most people won't be able to distinguish the difference in appearance."

Trees and shrubs

Don't forget to plan for trees and shrubs.



A footbridge and dry creek bed add dimension to this same backyard a few years after the home was built. Despite all the strategically placed plants, there is still enough lawn to enjoy summer activities. ***(Photo by Diane Holt)***

"People are planting less grass and more flowers and shrubs," Purcell adds. "Many xeric plants require less maintenance and attract far greater varieties of birds and butterflies."

Carefully positioned trees can save up to 25 percent of a household's energy consumption for heating and cooling, according to the U.S. Department of Energy. On average, a well-designed landscape provides enough energy savings to return your initial investment in less than eight years.

Watering your lawn

Most lawns receive twice as much water as they require for a healthy appearance. The key to watering lawns is to apply the water infrequently, yet thoroughly. This creates a deep, well-rooted lawn that efficiently uses water stored in the soil. As a rule of thumb, apply 1 inch of water to the lawn as rapidly as possible without runoff.

Mulches

Use mulch wherever possible. Good mulch, such as pine bark, compost and wood chips, or inorganic materials such as lava rock, limestone or permeable (not sheet) plastic, conserves water by significantly reducing moisture evaporation from the soil. Mulch also reduces weed populations, prevents soil compaction and keeps soil temperatures more moderate.

Appropriate maintenance

Depending on the grass species, new grass should be mowed to remove one-third of its height when it reaches between 1.5 inches to 4.5 inches tall. Make sure the mower blades are sharp or they will pull the grass seedlings out of the soil. Mowing at this time will encourage the grass to thicken and spread.

More information

Two free publications are available from the Energy Division. To get a copy of "Planting Trees for Comfort, Sunshine and Reduced Home Energy Costs in Idaho" and "Landscaping for Energy Efficiency," call the Idaho Energy Hotline at **1-800-334-SAVE** or email Linda Cawley at lcawley@idwr.state.id.us.

Spring precipitation may make

Ron Abramovich, left, water supply specialist with the Natural Resources Conservation Service, and Bill Ondrechen, hydrologist with the Idaho Department of Water Resources, discuss Idaho's snow pack levels during the water supply meeting in March. ***(Photo by Dick Larsen)***

The lack of precipitation the past two months is taking its toll on Idaho's frozen liquid gold, according to the Idaho Water Supply's March report.

The report was prepared by Ron Abramovich and Philip Morrisey with the Natural Resources Conservation Service.

Snowpack percents of average are gradually decreasing as a result of the lack of winter storms moving into Idaho. February precipitation ranged from 80 percent of average in northern Idaho to 40 percent in the Bear River basin.

Snowpack percentages range from 75 percent to 110 percent of average for most basins; most low elevation drainages are reporting an average to well above average snowpack. A near normal snowpack sounds good after last year's snowpack that was only half of normal on April 1, but with most reservoirs reporting much less water than last year, a good snowpack and runoff are critical this year.

Streamflow forecasts range from a high of 120 percent of average in northern Idaho to 42 percent of average in the Bear River basin. Most streams across central and eastern Idaho are forecast in the 75 percent to 85 percent of average range. Palisades, Jackson Lake and Anderson Ranch reservoirs are not expected to fill based on below normal runoff volumes and low carry over storage.

Irrigation water supplies will be marginally adequate. Shortages depend upon your water source and water right and may occur in the upper Snake, Bear River, Oakley, Salmon Falls, Big Lost and Litt ditions closely during the next two months. Spr forecast, especially in southern Idaho.

Recreation

Owyhee River runners should be getti peratures can melt the above average low eleva peaks especially with a blast of rain.

The Bruneau River should have a good ners will benefit the most from the above avera Middle Fork Salmon River has twice the amou season this year. The main Salmon River floati

The Payette reservoir system will fill an melt runoff recedes. Lucky Peak and Arrowroc voir recreation; irrigation releases will provide Capitol City.

Anderson Ranch Reservoir is not expe lems are expected. Palisades Reservoir and Ja provide good flows for the fishing and recreatio

Snowpack

The lack of new snow is causing Idaho conditions. Most snowpacks range from 75 pe are the low elevation snowpacks that do not con above to well above average.

Low elevation basins in northern Idah 160 percent of average. The Owyhee basin s SNOTEL sites and aerial markers. The snowp average, while higher sites are only 85 percent

The Camas Creek basin snowpack nea high elevation of Big Wood basin is only 82 consistent with all basins reporting in the 75 per snowpacks in the state are 72 percent to 77 per of the Snake River in Wyoming, and Bear Rive

Precipitation

February precipitation took a downwa The Panhandle Region and Clearwater basin re the Bear River basin received the least at only

During the same month, precipitation Salmon and west-central mountains to 45 perce

e or break Idaho's water supply

le Lost basins. Water users should monitor con-
ing precipitation can make or break a streamflow

ing their gear ready for a good year; warm tem-
ation snow rapidly and generate potentially high

d boating season too. Northern Idaho river run-
age snowpacks with a long boating season. The
unt of snow as last year so expect a much longer
ng season will be long and enjoyable as usual.
d provide excellent flows when the natural snow-
k reservoirs will fill and provide excellent reser-
e adequate tubing levels for floating through the

ected to fill, but will be close and no major prob-
ackson Lake are not expected to fill, but should
onal boating.

o's snowpack to gradually slip to below normal
rcent to 110 percent of average. The exceptions
tribute substantially to the overall supply, but are

ho, such as Hayden Lake and Palouse basin, are
snowpack is 132 percent of average, based on
pack in the lower Boise mountains is also above
of average.
ar Fairfield is 106 percent of average, while the
percent. Eastern Idaho snowpacks are more
rcent to 85 percent of average range. The lowest
rcent of average in the Lemhi basin, headwaters
r basin.

ard turn and was below normal across the state.
eceived the most at 80 percent of average, while
41 percent of average.
ranged from about 55 percent of average in the
ent in central, eastern and southern Idaho. Water

year to date precipitation remains above normal in only the Panhandle Region and Clearwater basin, 119 percent and 111 percent of average respectively.

Reservoirs

Reservoir storage varies across the state. The lakes and reservoirs in the Panhandle Region are storing near average or better amounts with the exception of Pend Oreille Lake. Rapid melting of the above average low elevation snow will generate rapid increases in these northern Idaho streams and lake levels. Dworshak Reservoir will fill this year, making flood control releases necessary in early February.

The Payette reservoir system is 76 percent of average and will fill. The Boise reservoir system is 70 percent of average - Lucky Peak and Arrowrock will fill, but Anderson Ranch Reservoir is not expected to fill. Owyhee Reservoir is 23 percent full and will increase rapidly in storage when the low snow melts, but may not fill completely.

Magic Reservoir remains low waiting for the near normal snowpack in Camas Creek to pour into the reservoir; hope-fully, the Big Wood River can fill Magic reservoir the rest of the way. Mackay Reservoir is 72 percent of average and will fill. Palisades Reservoir is half of average and Jackson Lake is one-third of average and neither is expected to fill. American Falls Reservoir is expected to fill by late April.

Bear Lake is only 65 percent of average and will remain low with Bear River forecasted at only 42 percent of average, but carry over storage from previous years should yield near full supplies to farmers. Oakley Reservoir storage is less than half of average, while Salmon Falls Reservoir is only a quarter of average. Brownlee Reservoir is 89 percent of average, 68 percent full.

Streamflow

Spring and summer streamflow forecasts decreased 5-20 percentage points across most of the state as a result of the below to well below normal February precipitation. The lowest forecasts in the state are in the Bear River basin at 42 percent of average. The highest forecasts are in the Panhandle Region, Clearwater basin and Owyhee basin at 100 percent to 120 percent of average.

Elsewhere, streams are forecast in the 60 percent to 90 percent of average range. Normal or better precipitation is needed for the remaining winter months and in the spring to ensure adequate water supplies. Below normal spring precipitation like Idaho received the past two seasons will only result in observed streamflow levels below the "Most Probable" or 50 percent exceedance level.

Now's the time to start saving water inside and outside

With warmer weather just around the corner, it's time to start thinking how to conserve water. Sometimes it's even the little things that make a difference. So after you read these tips, see how many you can incorporate into you lifestyle.

Outside the house

- **Lawns and flowerbeds –** In developing a landscaping plan, do some research by reading up or taking a class on landscape design. Contacting a local landscape contractor or plant nursery for water-wise landscaping and planting ideas is also a good place to start.
- **Water in early morning or evening –** You can lose as much as 30 percent of your water in evaporation from wind and heat when watering mid-day.
- **Don't water sidewalks and streets –** Position your sprinkler so it will just reach the edge of the landscaped area you want to water.
- **Cleaning driveways and sidewalks –** Use a broom, not a hose.
- **When washing your car –** Use a bucket and shut off the hose between rinses.

Inside the house

- **Check your toilets for leaks –** Put a little food coloring or toilet dye tabs in your toilet tank. If without flushing, the color begins to appear in the bowl, you have a leak that should be repaired immediately.
- **Put a plastic bottle in your toilet tank –** To reduce water waste, put an inch or two of sand or pebbles in a plastic bottle to weigh it down. Fill the remainder of the bottle with water, secure the lid, and put it in your toilet tank safely away from operating mechanisms. In an average home, the bottles may displace or save 10 or more gallons of water a day. (Before trying this, check to see if you already have a low-flow model.)
- **Install water-saving showerheads and flow restrictors –** Your local hardware or plumbing supply store stocks inexpensive water-saving showerheads or restrictors that are easy to install.
- **Check faucets and pipes for leaks –** Even the smallest drip from a worn washer can waste 20 or more gallons a day. Larger leaks waste hundreds.
- **Dishwashers –** Use your automatic dishwasher only for full loads.
- **Washing machine –** Use your automatic washing machine only for full loads.

(**Editor's note:** Information for these tips was obtained from the Coos Bay-North Bend Water Board .)

Boise hosts bioenergy conference

The 10th biennial bioenergy conference will open its doors in Boise this September to hundreds of people interested in biomass renewable resources.

The conference will be held in the heart of Boise at the Boise Centre on the Grove from Sept. 22 to Sept. 26. Day-long tours will be conducted on Sept. 22 and Sept. 26, while an array of presenters will speak the other three days.

With the theme "Bioenergy for the Environment," the conference will emphasize using biomass to reduce our dependence on fossil fuels and supplement our regional energy resources while saving the environment.

The conference will provide a forum for attendees to share and develop new ideas that will improve their knowledge of bioenergy as an energy resource. It will highlight successful commercialization efforts and emphasize the biomass renewable resource base that is all around us.

The Pacific Regional Biomass Energy Program and the U.S. Department of Energy in Seattle, Wash., will host the conference assisted by the Idaho Energy Division and energy offices from Alaska, Hawaii, Montana, Oregon and Washington. The Energy Division and the University of Idaho, Department of Biological and Agricultural Engineering, are managing the conference.

Additional information is available on the conference web site at www.bioenergy2002.org or by calling John Crockett, energy specialist with the Energy Division, at 208-327-7962.

Tours highlight Idaho industries

Some of Idaho's most scenic attractions will be featured during the Bioenergy 2002 Conference in September.

"Early bird" tours will provide two options on Sunday, Sept. 22, and three options on Thursday, Sept. 26.

Early risers can join a bus tour of the deepest gorge in North America, known as Hells Canyon. Visitors will have the opportunity to tour the hydroelectric facilities at Hells Canyon Dam followed by a jet boat ride on the Snake River through the canyon.

For visitors who want to stay in the city, a trolley ride will take participants on a tour of the Boise's famous geothermal system followed by a visit to the Old Idaho Territorial Penitentiary.

Idaho's agricultural center ranks in the top 10 in the production of 18 crops nationally. Conference visitors who attend the Magic Valley tour on Thursday will visit the Thousand Springs area where they will see numerous natural springs gush from the steep canyon walls and cascade into the Snake River below.

Idaho is famous for its potatoes and just west of Boise near the city of Caldwell conference visitors can tour the J.R. Simplot plant that makes ethanol from potato waste. Before returning to Boise, visitors will visit the World Center for Birds of Prey.

Micron is one of the world's largest computer chip manufacturers and one of the largest employers in Idaho. The Micron tour will allow visitors to see how this company serves its computer, telecommunication and electronic customers.

Idaho companies receive energy awards

As homeowners become more accustomed to buying energy-efficient appliances, so are they recognizing the need to purchase homes that are built to save energy.

For several years the manufactured home industry has been encouraged to construct energy-efficient homes. During the Idaho Manufactured Housing Association's annual conference the Energy Division presented Champion Redman Homes of Weiser with an energy efficiency achievement award for being the first Idaho home manufacturer to produce an Energy Star® labeled home.

In presenting the award, Bob Minter, senior energy conservation specialist with the Energy Division, noted that Champion Redman Homes was also one of the first home manufacturer's in the Northwest to sign the Energy Star Partnership Agreement with U.S. Environmental Protection Agency, in cooperation with the Northwest Energy Efficient Manufactured Home™ (NEEM) program.

Manufacturers participating under the NEEM program construct homes to an energy efficiency level of about 30 percent above minimum HUD (Housing and Urban Development) code standards. The homes are marketed under the trademark Super Good Cents® for electrically heated units and Natural Choice™ for natural gas and propane-heated homes.

SGC and NC homes are labeled Energy Star when they meet additional energy efficiency specifications under the NEEM program.

"All NEEM homes are certified and inspected by the region's state energy offices or their contractors," says Minter.

Champion Redman constructed about 40 Energy Star labeled homes by year's end. Three of Idaho's five manufacturers currently construct Energy Star labeled homes, while all five Idaho plants produce SGC and NC units.

Additional awards

The Energy Division presented two achievement awards to Idaho manufactured home companies during the Oregon Manufactured Housing Show in Salem, Ore. Champion Redman received a second award for producing the most NEEM homes during 2001. Guerdon Enterprises, LLC, of Boise received an energy achievement award for producing the highest percentage of energy-efficient homes in 2001.

"By participating in this program, the region's home manufacturers are not only helping save hundreds of thousands of kilowatt hours and therms of natural gas, but they are also reducing the need for additional generation facilities," says Minter.

"The industry program helps save hundreds of dollars in home heating and cooling costs annually for each participating homeowner through the NEEM partnership effort with utilities and the regions' energy offices. Homeowners are also living in a more comfortable and healthier environment by buying homes built to higher energy efficiency levels."

During 2001 the region's 18 manufacturers in the Northwest constructed more than 3,950 energy-efficient homes under the NEEM program, which is approximately 51 percent of the region's manufactured home production.

Jim Bell (left), manager of Champion Redman Homes of Weiser, receives an energy efficiency achievement award from Bob Minter, senior energy specialist with the Energy Division. Champion Redman Homes was the first Idaho manufactured home company to produce an Energy Star labeled home. ***(Photo by Gub Mix)***

Tip of the month

Chill out with efficient fridge

Refrigerators are among the most energy intensive appliances in a home, but with a few steps you can keep your energy costs to a minimum.

Check that your refrigerator isn't too cold. Recommended temperatures are 37 to 40 degrees Fahrenheit for the fresh food compartment and 5 degrees for the freezer section, according to the U.S. Department of Energy.

Long-term storage freezers should be kept at 0 degrees. To check the temperatures of your refrigerator place a thermometer in a glass of water and read it after 24 hours; for the freezer, stick the thermometer between frozen packages.

Frost buildup decreases energy efficiency, so regularly defrost manual-defrost refrigerators and freezers. Replace your refrigerator door seals if they are not airtight, and cover liquids and wrap foods – uncovered foods release moisture and make the condenser work harder.

Move your refrigerator out from the wall and vacuum its condenser coils once a year unless you have a no-clean condenser model. Finally, if you're in the market for a new refrigerator, pay attention to the EnergyGuide label, which lists electricity use in kilowatt-hours – the lower the better.

For more information on other ways to save energy at home, visit DOE's website at www.eren.doe.gov/energy_savers or by email at energy_tips@nrel.gov with questions or problems. To learn more about Energy Star refrigerators and other appliances, go to the Energy Star website at www.energystar.gov.

Study your options when appliance shopping

You're shopping for a new refrigerator, but you're not quite sure which brand or size would be best for your needs.

The U.S. Department of Energy and the U.S. Environmental Protection Agency have teamed up to provide you some tips for selecting an Energy Star® refrigerator.

- Top freezer models are more efficient (use 7-13 percent less energy) than side-by-side models.
- Manual defrost models use half the energy of automatic defrost models, but must be defrosted periodically to remain energy efficient.
- Automatic icemakers and through-the-door dispensers will increase energy use by 14-20 percent and increase the purchase price by about $75-$250.
- Models with an anti-sweat heater will consume 5 percent to 10 percent more energy. Look for a model that has an "energy saver" switch that allows you to turn off or turn down the heating coils that prevent condensation.
- The most energy-efficient models are in the 16-20 cubic foot sizes. Generally, the larger the refrigerator, the greater the energy consumption. Too large a model will waste space and energy; too small a model could mean extra trips to the grocery store.
- It is usually less costly to run one larger refrigerator than two smaller ones.
- If two different sized refrigerators use the same amount of energy, the larger model can be considered more efficient because it keeps more space cold with the same amount of electricity.

Ask questions

Don't hesitate to ask questions. In fact, you may want to take a list.

- Are rebates or financing available from local utilities or government agencies for the purchase of an Energy Star® refrigerator?
- What is the energy rating? (Be sure to check the EnergyGuide label.)
- What makes this model more energy efficient than other similar models?
- What do I need to know about the refrigerator in order to use it most effectively? (e.g., allow 2 inches air flow around refrigerators)
- When buying a contractor-supplied refrigerator, specify an estimated annual energy use.

Look for the ENERGY STAR

Experts from page 8

penetrated by mold. Wood, cement and other hard surfaces can usually be cleaned and treated."

Controlling moisture

Mold grows where there are mold spores, water, food and the right temperature. Three of these things are present in all buildings — spores, food and the right temperature. Some building materials are nutritious snacks for mold, and buildings are conditioned to the right temperatures for mold growth.

The key to preventing mold growth is to keep water out of buildings. Water comes through leaks from the outside, leaks from the inside and even the ground. Water also enters the home in the form of condensation of moisture in heated inside air on cold surfaces, such as metal window frames, steel and concrete structures, and uninsulated places in walls and ceilings.

Daily activities in the kitchen and bathrooms can introduce large amounts of water vapor and other contaminants into the home. Using a hood exhaust fan in the kitchen over the stove and exhaust fans in the bathrooms can help eliminate unnecessary moisture in the air before it has an opportunity to cause any damage.

Make sure your bathroom, kitchen and clothes dryer/laundry room exhaust directly to the outside, not into an attic or other enclosed space.

For more information, the American Lung Association's Health House® Program has designed some tip sheets. Look for Tip Sheet #1 on Mold. You may also want to look at the following websites for more information:

The Health House : www.healthhouse.org

The Building Science Corporation: www.buildingscience.com/

The U.S. Environmental Protection Agency: www.epa.gov/iaq/pubs/moldresources.html

Doug Ness, local remediation contractor: www.nessconstruction.com

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